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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,408	01/18/2002	Kenji Tsukada	Q68137	2132

7590 03/01/2004

Sughrue Mion  
2100 Pennsylvania Avenue NW  
Washington, DC 20037-3202

EXAMINER
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LIANG, LEONARD S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/031,408	TSUKADA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Leonard S Liang	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-50, 52-71 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

***Election/Restrictions***

This application contains claims directed to the following patentably distinct species of the claimed invention:

Species I drawn to claims 1-12, 22-50, 52-53, 55-62, 64-66, 68, and 70-71 for reciting limitations concerning methods of piezo-electric element detection as related to vibration.

Species II drawn to claims 13-21, 54, and 69 for reciting limitations concerning an ink cartridge, carriage, and carriage moving step.

Species III drawn to claims 63 and 67 for reciting limitations concerning a recording head maintenance operation.

Species I is further directed to the following patentably distinct species of the claimed invention:

Species IA drawn to claims 1, 46, 56, and their dependent claims, for reciting “wherein said piezo-electric element of said piezo-electric device has a vibration part, and said piezo-electric device outputs a signal indicating a residual oscillating state of said vibration part under free oscillation, and wherein said ink consumption condition is detected based on a change of said residual oscillating state of said vibration part under free oscillation corresponding to ink being consumed.”

Species IB drawn to claims 33, 57-59, and 65-66, and their dependent claims, for reciting “wherein said piezo-electric device measures a periodic peak value of a waveform of counter electromotive force generated by residual vibration remaining in said vibration part by a predetermined number of said periodic peak values from a predetermined point of time, and said

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piezoelectric device measures more number of said periodic peak values than said predetermined number of said periodic peak values in subsequent detection of said ink consumption condition, and thereby detects said ink consumption condition.”

Species IC drawn to claim 64 for reciting “abstaining from jetting ink drops from said recording head in a non-recording state.”

Species II is further directed to the following patentably distinct species of the claimed invention:

Species IIA drawn to claim 13 for reciting “wherein said carriage moving step moves said carriage at a faster speed than a speed for moving said carriage during a recording operation.”

Species IIB drawn to claims 14 and 54, and its dependent claim, for reciting “wherein a shock is given to said ink cartridge during moving said carriage by said carriage moving step.”

Species IIC drawn to claim 15 for reciting “wherein said consumption condition redetection step is executed when a pre-determined time passes after said carriage moving step ends.”

Species IID drawn to claim 16, and its dependent claims, for reciting “wherein said consumption condition redetection step is executed during moving said carriage by said carriage moving step.”

Species IIE drawn to claim 19 for reciting “wherein said reconfirmation step is executed several times during moving said carriage by said carriage moving step, and presence or absence of ink in said ink cartridge is decided on the basis of detection results of said reconfirmation steps.”

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Stephen D. Meier  
Primary Examiner